

## PATENT COOPERATION TREATY

PCT

## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

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TBK - PATENT

Rec'd PCT/PTO 21 MAR 2005



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| Applicant's or agent's file reference<br>WO 38948   |  | <b>FOR FURTHER ACTION</b> See Notification of Transmittal of International Preliminary Examination Report (Form PCT/PEA/416) |
| International application No.<br>PCT/IB 03/04338  | International filing date (day/month/year)<br>02.10.2003 | Priority date (day/month/year)<br>03.10.2002   |
| International Patent Classification (IPC) or both national classification and IPC<br>B60K1/04 |  |  |
| Applicant<br>TOYOTA JIDOSHA KABUSHIKI KAISHA et al.   |  |  |

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of **5** sheets, including this cover sheet.
- ☐ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of  sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the opinion
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☐ Certain observations on the international application

|   |   |
|---|---|
| Date of submission of the demand<br><br>21.10.2003  | Date of completion of this report<br><br>13.01.2005   |
| Name and mailing address of the international preliminary examining authority:<br><br> European Patent Office<br>D-80298 Munich<br>Tel. +49 89 2399 - 0 Tx: 523656 epmu d<br>Fax: +49 89 2399 - 4465 | Authorized Officer<br><br>Bronold, H<br><br>Telephone No. +49 89 2399-2948<br><br> |

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT**

International application No. PCT/IB 03/04338

**I. Basis of the report**

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17))*):

**Description, Pages**

1-14 as originally filed

**Claims, Numbers**

1-12 as originally filed

**Drawings, Sheets**

1/4-4/4 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).  
☐ the language of publication of the international application (under Rule 48.3(b)).  
☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.  
☐ filed together with the international application in computer readable form.  
☐ furnished subsequently to this Authority in written form.  
☐ furnished subsequently to this Authority in computer readable form.  
☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.  
☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:  
☐ the claims, Nos.:  
☐ the drawings, sheets:

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT**

International application No. **PCT/IB 03/04338**

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

*(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)*

6. Additional observations, if necessary:

**V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

1. Statement

|                               |             |           |
|-------------------------------|-------------|-----------|
| Novelty (N)                   | Yes: Claims | 5-9       |
|                               | No: Claims  | 1-4,10-12 |
| Inventive step (IS)           | Yes: Claims |           |
|                               | No: Claims  | 1-12      |
| Industrial applicability (IA) | Yes: Claims | 1-12      |
|                               | No: Claims  |           |

2. Citations and explanations

**see separate sheet**

**Re Item V**

**Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

**1. Reference is made to the following documents**

- D1: US-B1-6 378 637 (KAMI YOZO ET AL) 30 April 2002 (2002-04-30)
- D2: EP-A-0 677 417 (DAIMLER BENZ AG) 18 October 1995 (1995-10-18)
- D3: PATENT ABSTRACTS OF JAPAN vol. 2000, no. 26, 1 July 2002 (2002-07-01) & JP 2001 268720 A (EQUOS RESEARCH CO LTD), 28 September 2001 (2001-09-28)

2. From D1 there is already known a fuel cell equipped vehicle comprising a fuel cell (column 4, line 64, "fuel cell 3") that generates electric power through a reaction between a fuel gas and an oxidizing gas, a fuel gas tank (column 4, line 64, "fuel gas tank 1") that stores the fuel gas to be supplied to the fuel cell, fuel cell accessory (column 4, line 54 to 67) that operates when the fuel cell generates electric power, a storage battery (column 4, line 65, "electrical energy storage 7" together with column 3, lines 33 to 35) that stores electric energy, and an electric power control unit (column 5, line 8, "distributor 22") that controls supply of electric power regarding the fuel cell and the storage battery, wherein the fuel cell, the fuel gas tank, the fuel cell accessory, the storage battery and the electric power control unit are disposed below a floor of a passenger compartment of the vehicle (column 5, line 36 to column 6, line 11, figure 7).

The applicant argues that according to D1 methanol is used as fuel gas whereas the alleged invention uses hydrogen and that according to the alleged invention the fuel gas is directly used in the fuel cell. However, those arguments are not included as respective technical features in claim 1. The fact that the fuel gas according to D1 has to be reformed does not change the fact that the fuel gas according to D1 serves as fuel gas for the fuel cell of D1 and is supplied to the fuel cell regardless whether directly or after reformation.

Thus, all features of claim 1 are known from the disclosure of D1. Consequently, the subject matter of claim 1 does not fulfill the requirement of Art. 33 PCT with respect

to novelty.

For the sake of completeness it is pointed out that hydrogen fuel cells directly using hydrogen as a fuel gas without reforming are already known for example from D3.

3. Dependent claims 2 to 11 do not contain any features which, in combination with the features of any claim to which they refer, meet the requirements of the PCT in respect of novelty and/or inventive step, the reasons being as follows:

The subject matters of claims 2 and 3 can be easily derived from the disclosure of D1 (figure 7 of D1).

According to the disclosure of D1, the fuel cell accessory is disposed at one or both of a right side and a left side of the fuel cell, as claimed in claim 4 (figure 7 of D1).

To arrange the upper surfaces of the fuel cell, the fuel gas tank, the fuel cell accessory, the storage battery, and the electric power control unit at substantially equal heights, as claimed in claim 5, is known from the disclosure of D2 (figure 2a).

The subject matter of claim 6 defines a slight constructional change in the fuel cell equipped vehicle of claim 1 which comes within the scope of the customary practice followed by persons skilled in the art, especially as the advantages thus achieved can readily be foreseen.

Disposing the fuel cell, the fuel gas tank, the fuel cell accessory, the storage battery, and the electric power control unit in a space formed between a right-side frame and a left-side frame of a body frame, according to the subject matter of claim 7, is also known from the disclosure of D2 (figure 2b of D2).

A radiator for cooling the fuel cell and its deposition between two frame rails of the body frame, as claimed in claims 8 and 9, respectively, is already known from the disclosure of D2 (figure 1b of D2, ref. 33).

The subject matters of claims 10 to 12 merely define slight constructional changes in the fuel cell equipped vehicle of claim 1 which come within the scope of the customary practice followed by persons skilled in the art, especially as the advantages thus achieved can readily be foreseen.